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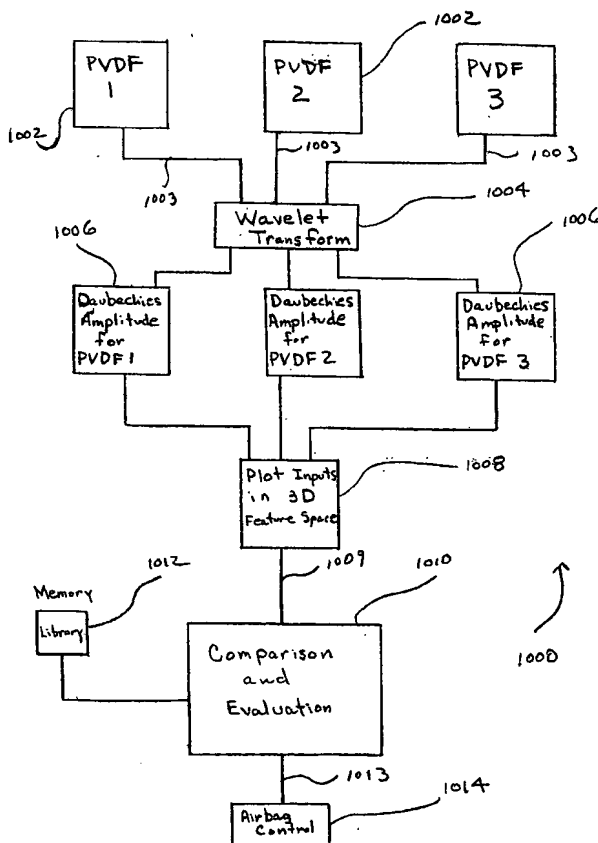
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(54) Title: CRASH SENSING VIA PIEZOELECTRIC SENSORS



(57) Abstract: A system and method for characterizing piezo-  
electric sensor responses for automotive vehicle crash analysis, is  
disclosed. The method employs Daubechies wavelet analysis to  
plot signal response amplitudes in three-dimensional space of at  
least one piezoelectric sensor. A cluster, signifying a combination  
of Daubechies amplitudes of the at least one piezoelectric sen-  
sor in three-dimensional space, is compared to reference clusters  
stored in the automotive vehicle. Based on results from compar-  
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ted to an occupant restraint control system in the vehicle to deploy  
a specific airbag at a specific power level.



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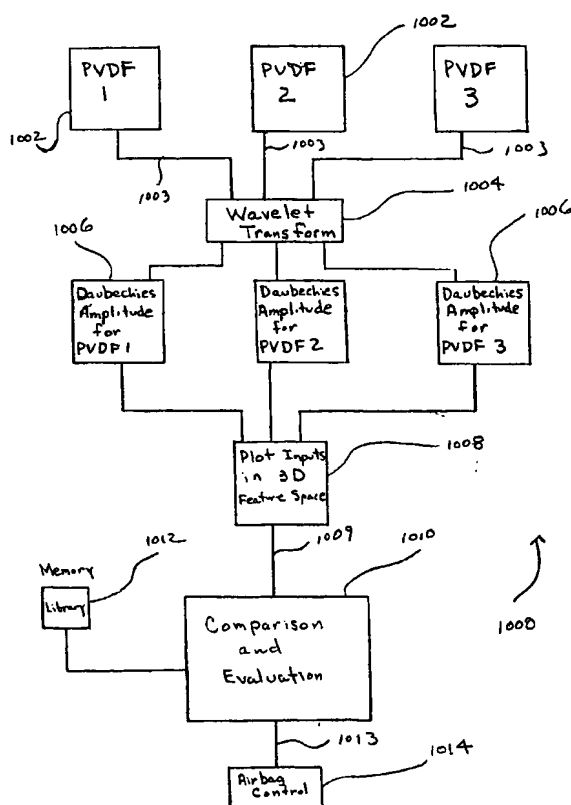
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(57) Abstract: A system and method for characterizing piezoelectric sensor responses for automotive vehicle crash analysis, is disclosed. The method employs Daubechies wavelet analysis (1006) to plot signal response amplitudes (1008) in three-dimensional space of at least one piezoelectric sensor. A cluster, signifying a combination of Daubechies amplitudes of the at least one piezoelectric sensor in three-dimensional space, is compared to reference clusters (1010) stored in the automotive vehicle. Based on results from comparing the cluster to the reference clusters, instructions are transmitted to an occupant restraint control system (1013) in the vehicle to deploy a specific airbag at a specific power level.



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